

**Notice of Allowability**

Application No.

10/618,394

Examiner

Olga Asinovsky

Applicant(s)

BENING ET AL.

Art Unit

1711

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 08/08/2005 and 10/24/2005.
2. ☒ The allowed claim(s) is/are 11-18 and 22-34.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☐ All    b) ☐ Some\*    c) ☐ None    of the:
    1. ☐ Certified copies of the priority documents have been received.
    2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.  
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
  5. ☐ CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.
    - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948) attached
      - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
    - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

- |   |  |
|---|--|
| 1. <input type="checkbox"/> Notice of References Cited (PTO-892)  | 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)                                    |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                | 6. <input checked="" type="checkbox"/> Interview Summary (PTO-413),<br>Paper No./Mail Date <u>10/24/2005</u> . |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),<br>Paper No./Mail Date _____ | 7. <input checked="" type="checkbox"/> Examiner's Amendment/Comment  |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit<br>of Biological Material          | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance                           |
|   | 9. <input type="checkbox"/> Other _____  |

### EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Michael Masse on October 24, 2005.

The application has been amended as follows: In claim 11, first line, delete "of Claim 1" and insert –having a general formula:



wherein:

- (i) A is a styrenic block,
- (ii) B is a dienic block,
- (iii) X is a residue of a diester coupling agent,
- (iv) n is the number styrenic block copolymer arms bonded to the residue of a diester coupling agent,
- (v) the molecular weight of the styreneic block copolymer arm (AB) is from about 2000 dalton to about 300,000 daltons, and
- (vi) the weight percentage of the polymer wherein n is at least 5 is less than about 8 percent,-

The amendment is made by including the definition of a radial styrenic block copolymer of the cancelled original claim 1. See interview summary.

## REASONS FOR ALLOWANCE

2. The following is an examiner's statement of reasons for allowance: Claims 11-18 is directed to a method for preparing a radial styrenic block copolymer having a general formula  $(AB)_nX$ . The issue of said method is an anionic polymerization of styrenic and dienic monomers in the presence of an organo-substituted alkali metal compound to produce a living polymer, and adding a metal alkyl compound during or after polymerization, and then adding a diester coupling agent to couple the living polymer and thereby produce the radial polymer.

The closest prior art is U.S. Patent 6,506,846 to Schade et al. While prior art discloses polymerization of all claimed components, Schade does not teach or suggest the addition of metal alkyl compound during or after polymerization and before adding a coupling agent.

Claims 22-34 is directed to a radial styrenic block copolymer having  $(AB)_nX$  type structure, wherein "n" is the number of arms bonded to the coupling agent. The issue of the invention is to control the low viscosity of the resulting radial styrenic block copolymer by controlling the number of arms of said copolymer, wherein the weight percentage of the polymer fraction having "n" equal to at least 5 is less than about 8 percent. To control the "n" limitation being  $n=5$  less than about 8 % is obtained by the method of claim 11. The composition of claims 22-34 is a product by process, wherein said obtained product is a benefit for a bitumen application. The closest references are

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Dillman et al U.S. Patent 5,420,203 and Schade et al U.S. Patent 6,506,846. Dillman does not disclose using a metal alkyl compound in the anionic polymerization process. Schade does not disclose how to reduce five and higher number of arms and using a block copolymer in bitumen application. Therefore, there is no motivation of direction to combine the teachings of Dillman invention and Schade invention for applying a block copolymer in Schade invention into bituminous composition in Dillman invention.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Olga Asinovsky whose telephone number is 571-272-1066. The examiner can normally be reached on 9:00 to 5:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James Seidleck can be reached on 571-272-1078. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

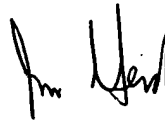
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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

O. A.

October 24, 2005

Olga Asinovsky  
Examiner  
Art Unit 1711



James J. Seidleck  
Supervisory Patent Examiner  
Technology Center 1700